Lernende Systeme

GERMANY'S PLATFORM FOR ARTIFICIAL INTELLIGENCE

Introduction of AI systems in companies

White Paper by
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Executive Summary

Artificial intelligence (AI) offers great potential for companies and their employees – whether through improved work processes and relief or digital business model innovations. At the same time, the change in companies must – and can – be shaped together and the challenges in the use of AI systems must be solved. This is the only way to overcome challenges and negative side effects in the use of AI systems. The overall aim is to create a new relationship between humans and machine, in which people and AI systems work together productively and the respective strengths are emphasized.

Change management is a decisive factor for the successful introduction of AI systems as well as the human-centric design of AI deployment in companies. Good change management also promotes the acceptance of AI systems among employees, so that the potential of the new technologies can be used jointly by all those involved, further innovation steps can be facilitated and both employees and their representatives can shape technological change.

The participation of employees and their representatives significantly contributes to the best possible use of AI systems and the interface between people and machine – especially in the sense of efficient, productive and health- and learning-promoting work organization. Early and process-oriented participation of employees and co-determination representatives is therefore an important component for the human-centred design and acceptance of AI systems in companies.

The introduction of AI has some special features that also have an impact on change management as well as on the participation of employees, including the processes of corporate co-determination. The members of the working group Future of Work and Human-Machine-Interaction of Plattform Lernende Systeme want to sensitize for the requirements of the change management in Artificial Intelligence. Therefore, the experts have developed a practice-oriented catalogue of requirements that is intended to provide orientation for the practical implementation of the introduction of AI systems in the various phases of the change process:

- **Phase 1 – Objective and impact assessment:** In the change processes for the introduction of AI systems, the objective and purpose of the applications should be defined from the outset with the employees and their representatives and information on how the AI system works should be provided. On this basis, the potential of the AI systems and the possible consequences for the company, the organization and the employees can be estimated. An important factor for the success of a change process is the involvement of the employees and the mobilization for the use of the new technologies.

- **Phase 2 – Planning and design:** In a second step, the design of the AI systems themselves is the main focus. This is primarily concerned with the design of the interface between human and AI system along criteria for the human-compatible and productive implementation of human-machine interaction in the working environment. Questions of transparency and explainability, data processing and possibilities of employee analysis by AI systems as well as the creation of stress profiles and the preventive consideration of employment development are of particular importance.

- **Phase 3 – Preparation and implementation:** The AI systems must also be integrated in a suitable manner into existing or new work processes and possibly changed organizational structures. This means preparing employees for new tasks at an early stage and initiating the necessary qualification measures. It is also important to design new task and activity profiles for employees and to adapt the work organization to a changed relationship between human and machine. A helpful instrument for the introduction of AI systems are pilot projects and experimental phases, in which empirical values can be collected before a comprehensive introduction and possible need for adaptation with regard to the AI systems, the qualification requirements or the work organization can be determined.

- **Phase 4 – Evaluation and Adaptation:** After the introduction of AI systems, a continuous review and evaluation of the AI deployment should take place to ensure possible adaptations regarding the design of the applications, the work organization or the further qualification of the employees. In addition, the regular evaluation of AI deployment allows the experience of the employees to be used and further innovation processes – both with regard to the further improvement of (work) processes and with regard to new products and business models – to be initiated together with the employees as designers of change.

There are many options available to companies for a successful transformation process. The following table summarizes the most important design options:

Table 1: Overview of phases, requirements and starting points for change processes with Artificial Intelligence

Objectives and Impact Assessment	
Objective and functionality of the AI system	• Organize early cooperation of all responsible persons in the company • Define and agree on the objective and purpose of the AI system before implementation • Provide and convey appropriate information on how the AI systems work
Potential analysis and operational impact assessment	• Careful potential analysis and operational impact assessment • Perform (health) impact assessment (usability, safety and security) • Assess employment effects and consequences for work-life balance • Anticipate challenges early on and develop design options
Participation and mobilization including corporate culture	• Use co-determination and agile forms of participation for the change process • Actively involve employees and their knowledge in the transformation process • Accompanying the change process with suitable information and dialogue formats
Planning and Design	
Design criteria for human-machine interaction	• Human-Machine-Interaction in Artificial Intelligence designed for the Human Being • Ensure individual protection and trustworthiness of AI systems • Develop meaningful division of work and favorable working conditions
Transparency, data usage and load profiles	• Strengthen explainability, graded transparency and traceability of AI systems • Implement privacy-by-design and anticipate and resolve data protection issues • Create load profiles and design human-machine interaction without contradictions
Early qualification for new requirements	
Early qualification for new requirements	• Understanding early competence development as the key to change management • Define continuing education goals for different profiles and create offers • Linking (technical) professional competencies with overarching competencies • Integrate empirical knowledge and strengthen process knowledge and reflective competencies

Work organization and task sharing	• Use expert knowledge and experience for organizational development • Maintain freedom of action for employees and enable meaningful activities • Clarify attributions of responsibility and liability issues early and clearly • Carry out risk assessment on design, load profiles and work organization
Experimental phases and wide-spread introduction	• Gather and evaluate experience in pilot and experimental phases • Derive needs for adaptation and accompanying measures for AI introduction
Evaluation and Adaptation	
Review, evaluation and adjustment	• Use pilot phases for evaluation and make necessary adjustments • Consider further development of self-learning systems and accompany it with examinations • Create continuous evaluation processes and establish a feedback culture
Participation in further innovation processes	• Using the experience and ideas of employees and interest groups as a motor for further innovations • Establish an open corporate culture and establish incubation tools • Promote interdisciplinarity and strengthen exchange between company divisions

This practice-oriented catalogue of requirements is aimed at all stakeholders involved in change processes and is intended to provide orientation for the successful introduction of AI systems in companies. In addition, these requirements should also inspire the further development of existing regulations – for example in legislation, social partnership or standardization – and thus enable an employment-oriented, flexible, self-determined and autonomous work with AI systems and promote the acceptance of AI systems.

Imprint
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